WOOD & GRIEVE ENGINEERS

New Public School Smalls Road Ryde

Site Services Infrastructure Report

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Project No. 30127-2
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Date:
16 May 2017

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Revision

REVISION	DATE	COMMENT	APPROVED BY
0	16/05/2017	First Issue	**SJM**

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1. Introduction

The NSW Department of Education (DoE) are preparing Development Application for the development of 'new public school, smalls road' located smalls road, Ryde (the 'site').

The New public school is proposed to accommodate up to take enrolment pressure off surrounding high schools exceeding student capacity, and accommodate future population growth within the Ryde Area. The high school will contain high quality classrooms, collaborative learning spaces and associated facilities.

Specifically, this proposal seeks development consent for the following works at the site:

- Construction of a 2 storey plus roof level multi-purpose school building, containing:
  - o Collaborative general and specialist learning hubs with a combination of enclosed and open spaces;
  - o Library and Resource Hubs;
    Staff workplaces;
  - o Student canteen;
  - o Indoor Movement Complex and other indoor recreation and performance spaces;
  - o Outdoor learning and recreational areas.
    General and specialist learning areas;
  - o Amenities; and
  - o Staff workplaces for teachers and administrative staff.
- Associated site landscaping and public domain improvements; and
- Augmentation and construction of ancillary infrastructure and utilities as required.

2. The Site

The site is located at 12 smalls road, Ryde. The site is located within the City of Ryde Area. The site covers an area of approximately 0.57 Ha.

The site is composed of three individual lots that include

- Lot 1 DP797483,
- Lot 1 DP797484,
- Lot 8 DP 821649.

The site is currently in use and in operation by the Department of Education.

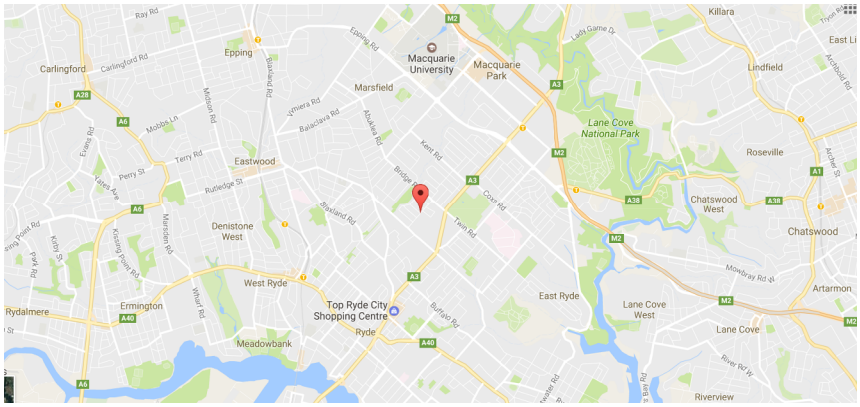

Figure 1 – Site Context

Figure 2 – Project Location

3. Electrical Infrastructure

3.1 Existing Electrical infrastructure

The existing site has a HV feed to a substation on site. Further investigation is required to confirm compliance.

An extract of the Ausgrid network is shown below:

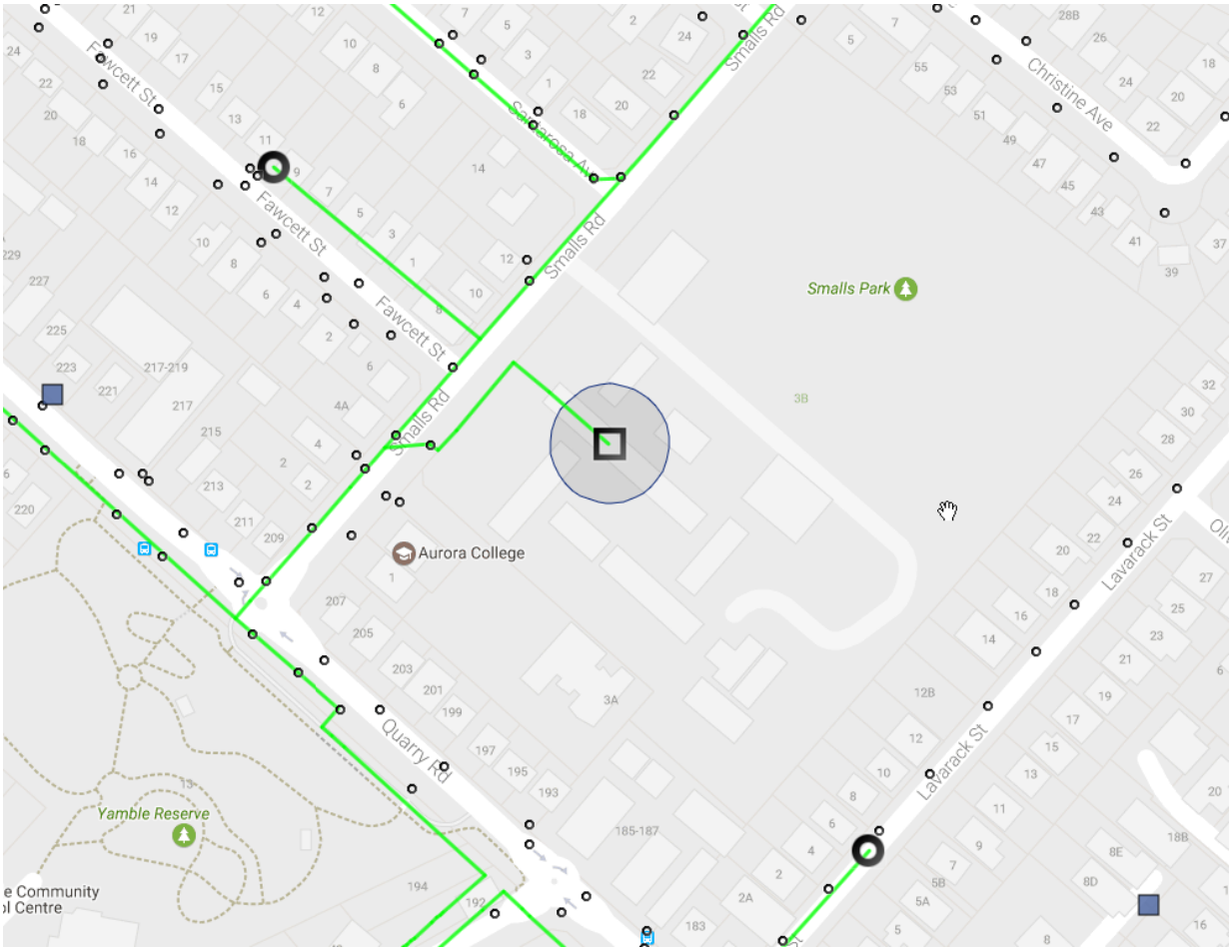

Figure 3 - Existing Ausgrid network

Figure 4 - Existing substation location

The existing Cerebral Palsy Alliance buildings to be retained obtain a power supply from the existing substation.

3.2 Proposed Electrical Augmentation

The electrical maximum demand calculated for the proposed new school development equates to 1,000A. An Application for Connection will be lodged with the Supply Authority to determine the arrangement for a new substation or retention of the existing.

3.3 Standby Power

No standby diesel generator power will be provided for the development.

3.4 Photovoltaic Power Generation

A 50kW photovoltaic array shall be provided, roof mounted, to the development.

3.5 General Power and Miscellaneous Services

A site main switchroom is to be established. A series of distribution boards throughout the development shall provide power. Reticulation shall be via dedicated electrical riser cupboards. The Development shall be provided with small power, voice and data provisions, electronic security, access control and CCTV monitoring.

3.6 Existing Telecommunications Infrastructure

An in-ground services survey of the site and close surrounds has been undertaken. This survey, in conjunction with DBYD Authority plans has indicated the following Carrier services in proximity to the site:

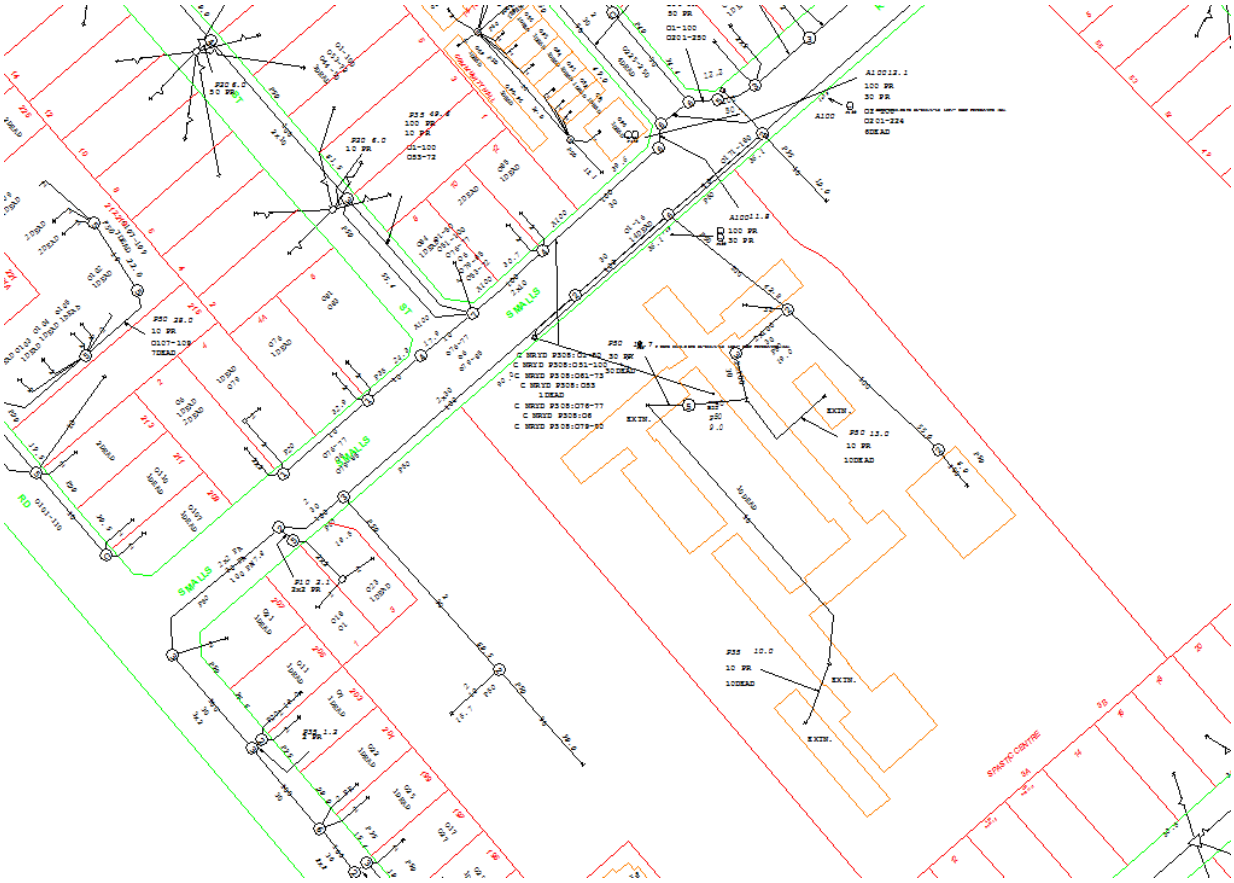

Figure 4 - Carrier services in vicinity of Site

The existing supply shows Telstra services along Smalls Road and into the existing school. The supply to the Cerebral Palsy Alliance buildings will be retained with the other services to the school demolished and pulled back to the road pits.

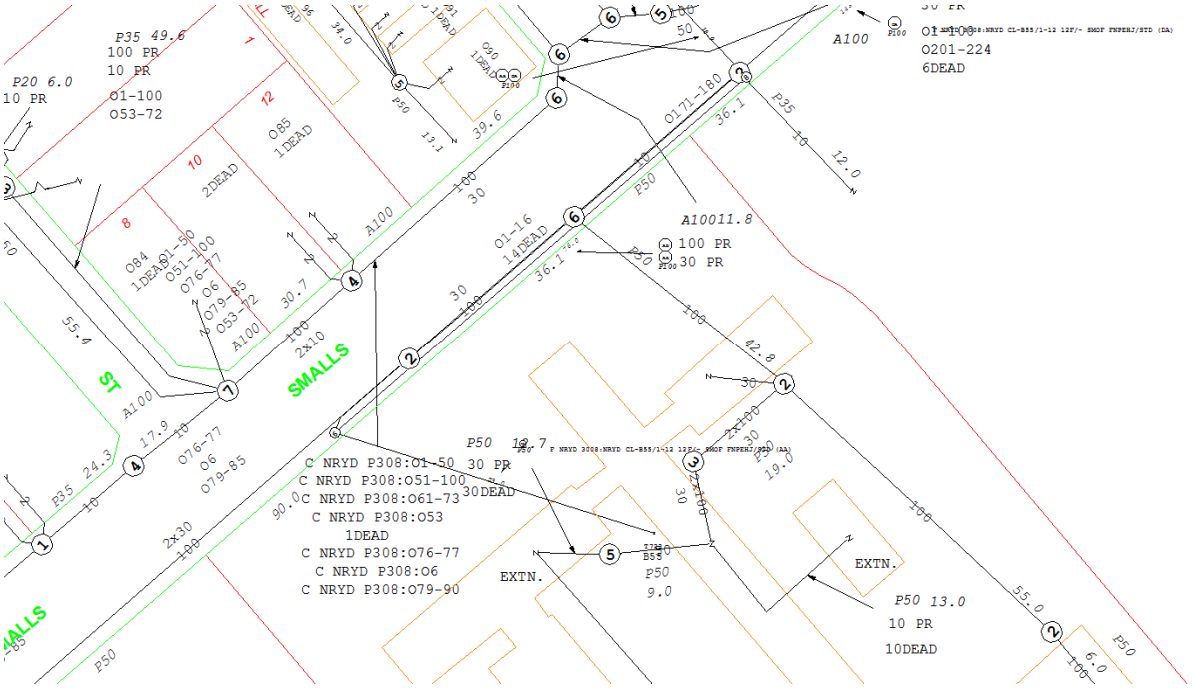

Figure 4 – Zoom in of carrier services in vicinity of Site

3.7 Proposed Telecommunications Infrastructure

The NBN is proposed to be available on site in December 2018. It is likely an NBN connection will be applied for and constructed with a Premises Distribution Hub provided within the main school building. Communications reticulation shall be provided throughout the school building via the structured cabling network.

4. Hydraulic Services

4.1 Cold Water Supply

Sydney Water own and operate the water network in the area. Any formal upgrades will be determined through a section 73 application for Notice of Requirements (NOR)

There is substantial water main infrastructure within the area, including a 450dia trunk main and smaller 150dia local reticulation network. With an understanding of the large infrastructure in the surrounding area, it is anticipated that supply can be provided and this will be confirmed via the Section 73 process.

The available infrastructure is demonstrated in figure 5.1 below for the new potable water supply;

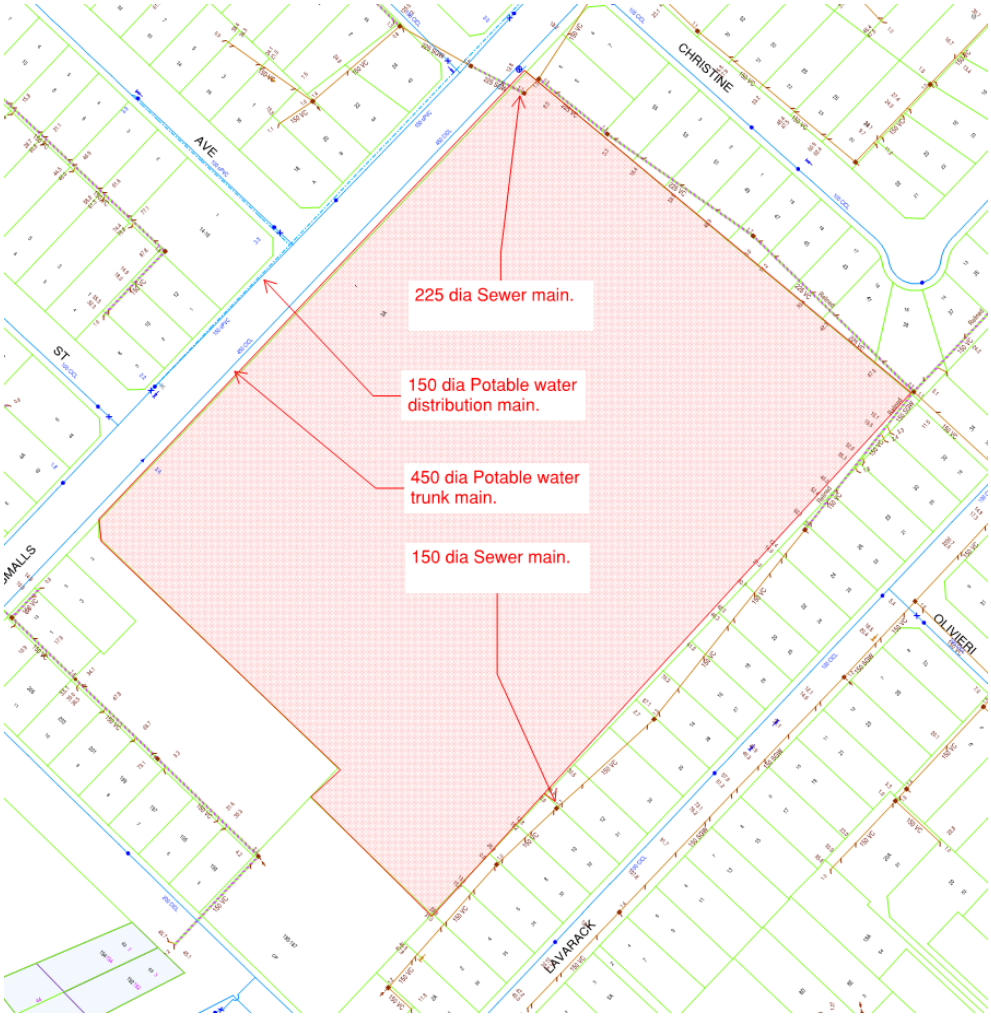

Figure 5 – Water and sewer layout of site

Hydraulic Services

Domestic cold water (potable) services will be designed to BCA, AS 3500.1-2015, Sydney Water and NSW Code of Practice for Plumbing and Drainage requirements to supply toilets, basins, cleaners wash points, end of journey wet area, canteen and other school facilities, fire and mechanical services make-up supplies as required. A central water meter/filter/pump room (for main supply connections) will be provided.

4.2 Drainage

Sydney Water own and operate the sewer network in the area. The existing site connection will require upgrading for additional proposed load. This will be determined through a section 73 application for Notice of Requirements (NOR).

Refer to figure 5.1 above which identifies the available sewer infrastructure surrounding the proposed development. The is a 225dia sewer main at the northern corner of the site towards Christie Street. Additionally, there is a 150dia easement through existing properties to the south east.

The required drainage requirement is considered minor and given the proposed site use is considered to have off peak discharge times and therefore it is expected that the surrounding infrastructure could be capable of servicing the proposed development with minor augmentation.

SANITARY PLUMBING AND DRAINAGE

Sanitary Plumbing and Drainage shall be a gravity collection system in accordance with AS 3500.2-2015, and the NSW Code of Practise for Plumbing and Drainage requirements, extending from all Sanitary Fixtures and Waste points. An overflow relief gully and boundary trap will be provided at the point of connection to the existing sewer main serving the site.

TRADE WASTE DRAINAGE

The new building will be provided with trade waste treatment systems. The trade waste system will collect future nominated discharge and appropriate trade waste agreements sort with Sydney Water.

4.3 Natural Gas

The Natural Gas supply will be extended from the Authority Gas main located in Smalls Road. The extensive secondary and network main infrastructure surrounding the property, subject to approval from Jemena would have the capcity to provide gas to the proposed development. A control valve shall be provided at the meter assembly to isolate gas supply for maintenance. Main and sub gas pressure regulators to reduce gas pressure to consumer levels and vents will be designed to be provided..

Refer to image 5.2 below for the available gas infrastructure

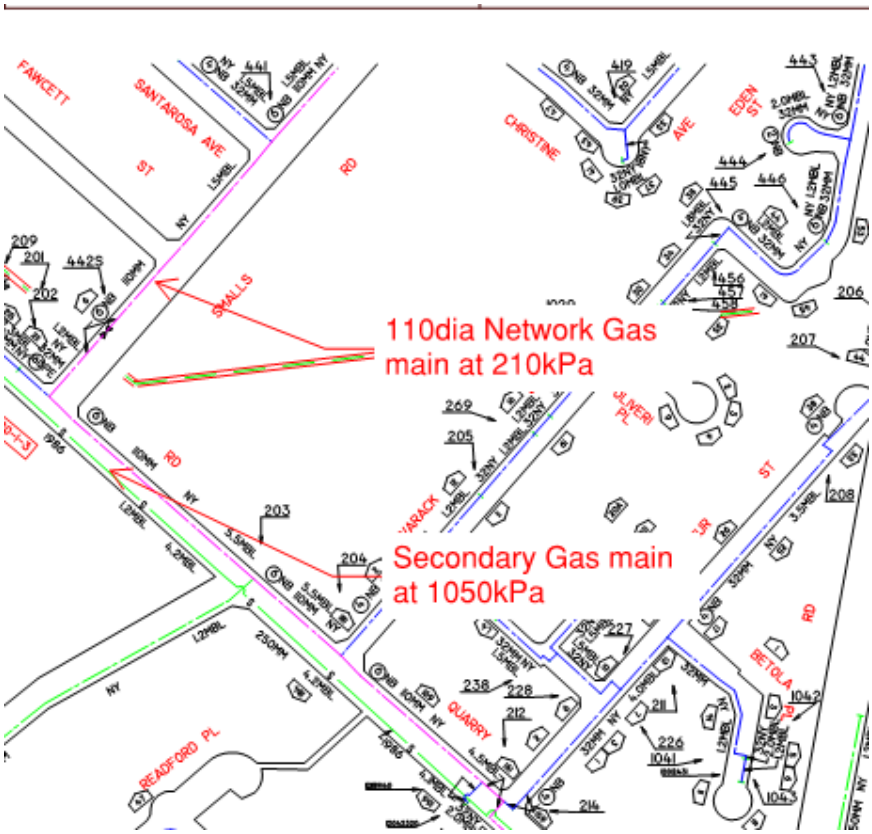

Figure 6 – Gas layout of site.

4.4 Stormwater Drainage, Downpipes and Rainwater Harvesting

The storm water system shall comprise of roof eaves gutter /balcony outlets and downpipes located externally which will drop and connect into civil storm water system. All roof drainage, stormwater drainage pipes and downpipes will be sized in accordance with AS 3500.3-2003 and Local Council guidelines. Storm water pipework shall be generally uPVC. Acoustic treatment will need to be provided to stormwater and downpipes to achieve the acoustic requirements.

Where possible stormwater and rainwater will be collected in a stormwater collection system. The system shall incorporate a rain water tank located in the basement complete with a filtration and treatment system prior to supply into the building for non-potable reuse. Non potable water will be designed to serve irrigation and toilets.

The hydraulic stormwater system will discharge to the required civil design outcome